OWNER'S OPERATING MANUAL

PlasmaWall™

PL-43HDX

with WideVision™

Flat Panel Display Monitor & Vivix™ PFP Controller

RUNCO

THE WORLD'S FINEST HOME THEATER PRODUCTS™

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INTRODUCTION

Congratulations on your purchase of the PL-43HDX Plasma display! Your PL-43HDX will provide you with many years of enjoyment no other plasma can match. It is compatible with today's current NTSC and PAL systems, as well as tomorrow's DTV standards. And since the display is the 16:9 aspect ratio, DVD widescreen movies and Digital Television will look the way they were meant to look- in the widescreen format. Plasma technology is proving to be the most flexible and reliable type of display device currently available. The PL-43HDX is considered a fixed-pixel device, like an LCD or DLP™ projector. LCD and DLP projectors require a light bulb to create the light, and the light is then reflected off of the tiny DMD mirrors in a DLP, or passed through LCD panels in LCD projectors. The plasma, however, uses tiny gas-filled pixels to create the image, which essentially generate their own light. This is very advantageous, as this allows the plasma display to be used in any type of situation, from dark theaters to light-filled rooms. And it also makes the plasma the most maintenance-free type of display device - no bulbs or CRTs to change, ever!

This manual will explain how to use your PL-43HDX plasma display, as well as its features, benefits and other important information. Please ensure you read this manual carefully before using your PL-43HDX, especially the safety precautions!

Features and Benefits

Your PL-43HDX Plasma display has many useful features, including:

- 1024 x 768 native resolution
- Image size: 37 7/8 in. (w) x 21 1/8 in. (h) x 43 in. diagonal
- Multiple aspect ratios
- 160 degree horizontal/vertical viewing angle
- Accepts all DTV formats (via outboard decoder), including 1080i, 720p, 480p
- Full control options, including RS-232C and IR
- Includes the Runco Vivix PFP Controller for extremely high-quality NTSC Video processing
- Less than 4 1/2 inches thin

WARNINGS AND SAFETY PRECAUTIONS

CAUTION:

To turn off main power, be sure to remove the plugs from power outlets. The power outlet socket should be installed as near to the equipment as possible, and should be easily accessible.

REMARQUE:

Pour mettre l'appareil hors circut, s'assurer de retirer la fiche de la prise d'alimentation. La prise d'alimentation doit être installé aussi proche que possible de l'appareil et doit être facile d' accès.

WARNING

TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE. ALSO DO NOT USE THIS UNIT'S POLARIZED PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLETS, UNLESS THE PRONGS CAN BE FULLY INSERTED. REFRAIN FROM OPENING THE CABINET AS THERE ARE HIGH-VOLTAGE COMPONENTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

AVERTISSEMENT

POUR EVITER UN FEU OU UN RISQUE D'ELECTROCUTION NE PAS EXPOSER CET ENSEMBLE A LA PLUIE OU A L'HUMIDITE; DE MEME, NE PAS BRANCHER LA PRISE POLAIRE AVEC UNE RALLONGE A MOINS QUE LES DENTS DE LA PREMIERE NE S'Y INSERENT PLEINEMENT.

EVITER D'OUVRIR LE COFFRET CAR IL Y A, A L'INTERIEUR, DES COMPOSANTS SOUMIS A UNE HAUTE-TENSION; POUR LES REPARATIONS, S'ADRESSER A UN PERSONNEL QUALIFIE.

WARNING

This equipment has been tested and found to comply with the limits for a Class 'B' digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the Installation Manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case, the user will be required to correct the interference at his own expense.

DOC compliance Notice
This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

DOC avis de conformation
Cet appareil numérique de la classe B respecte toutes les exigences du Réglement sur le Matériel D'interférence du Canada.

Safety Tips

Please read and follow the safety precautions listed below to ensure the equipment is free from damage, and to ensure that no injury will occur as a result of improper use.

- Do not insert any object, especially metal or liquids, into the Plasma or Vivix PFP Controller.
- Do not place any objects containing water or any other liquid on top of the Plasma or Vivix PFP Controller.
- Do not place the units in direct sunlight, near heaters or in extremely dusty or humid locations.
- Do not install this system outdoors or otherwise exposed to the elements.
- Do not place heavy objects on top of the Plasma or Vivix PFP Controller.
- If the power cord is damaged or frayed in any way, electrical shock and/or fire may result. Please do not place objects on the power cord, and keep the cord away from heat-emitting devices. Should the power cord become damaged in any way, please contact your Runco Dealer for a replacement cord.
- Do not remove the cover of the Plasma or Vivix PFP Controller for any reason. If any problems arise with the unit, please contact a Runco Dealer or Runco International for service. Removing the covers will void the warranty.

LIMITED WARRANTY

Congratulations on your purchase of a Runco video product and welcome to the Runco family! We believe Runco produces “The World’s Finest Home Theater Products”. With proper installation, setup and care, you should enjoy many years of unparalleled video performance.

This is a LIMITEDWARRANTY as defined in the Magnuson-Moss Warranty Act. Please read it carefully and retain it with your other important documents.

WHAT IS COVERED UNDER THE TERMS OF THIS LIMITED WARRANTY:

SERVICE LABOR: Runco will pay for service labor by a Runco Authorized Service Center when needed as a result of a manufacturing defect for a period of three (3) years from the effective date of delivery to the end user (excluding the plasma glass panel).

PARTS: (Not including plasma glass panel) Runco will provide new or rebuilt replacement parts for the parts that fail due to defects in materials or workmanship for a period of three (3) years from the effective date of delivery to the end user. Such replacement parts are then subsequently warranted for the remaining portion (if any) of the original warranty period.

PLASMA GLASS PANEL: Runco will pay for service labor by a Runco Authorized Service Center when needed as a result of a manufacturing defect for a period of one (1) year from the effective date of delivery to the end user. In addition, Runco will provide new or rebuilt replacement parts for the parts that fail due to defects in materials or workmanship for a period of one (1) year from the effective date of delivery to the end user. Such replacement parts are then subsequently warranted for the remaining portion (if any) of the original warranty period.

WHAT IS NOT COVERED UNDER THE TERMS OF THIS LIMITED WARRANTY:

Image burn-in on plasma display panels are specifically excluded from coverage under this Limited Warranty. Image burn-in is the result of misuse of the product and therefore cannot be repaired under the terms of this Limited Warranty.

TO AVOID IMAGE BURN-IN:
Please ensure that still images are left on your plasma display panel for no more than a few minutes. Also ensure that images displayed in the 4:3 aspect ratio mode (black or gray stripes, but no picture information is present on the left and right edges of the screen) are used as infrequently as possible. This will prevent permanent image burns on your plasma display panel, which can be seen permanently under certain conditions once burn-in has occurred.

The types of images to avoid include video games, still images and computer screens with stationary tool bars and icons. (This is why computers are equipped with screen savers – to prevent still images from burning into the monitor’s phosphors after being displayed continuously for an extended period of time).

Normal viewing material such as television/satellite broadcasts, videotape or DVDs (not put into pause for extended periods of time) will not cause damage to your display under normal conditions. Many DVD players are also equipped with screen savers for this reason.

IMPORTANT: RUNCO IS NOT RESPONSIBLE FOR IMAGE BURNS ON ANY DISPLAY. PLEASE EXERCISE CAUTION WHEN USING A 4:3 IMAGE ON A 16:9 SCREEN.

This Limited Warranty only covers failure due to defects in materials and workmanship that occur during normal use and does not cover normal maintenance. This Limited Warranty does not cover cabinets or any appearance items; failure resulting from accident, misuse, abuse, neglect, mishandling, misapplication, faulty or improper installation or setup adjustments; improper maintenance, alteration, improper use of any input signal; damage due to lightning or power line surges, spikes and brownouts; damage that occurs during shipping or transit; or damage that is attributed to acts of God. In the case of remote control units, damage resulting from leaking, old, damaged or improper batteries is also excluded from coverage under this Limited Warranty.

CAUTION: THIS LIMITED WARRANTY ONLY COVERS RUNCO PRODUCTS PURCHASED FROM RUNCO AUTHORIZED DEALERS. ALL OTHER PRODUCTS ARE SPECIFICALLY EXCLUDED FROM COVERAGE UNDER THIS LIMITED WARRANTY. MOREOVER, DAMAGE RESULTING DIRECTLY OR INDIRECTLY FROM IMPROPER INSTALLATION OR SETUP IS SPECIFICALLY EXCLUDED FROM COVERAGE UNDER THIS LIMITED WARRANTY.

RIGHTS, LIMITS AND EXCLUSIONS:

Runco limits its obligations under any implied warranties under state laws to a period not to exceed the warranty period. There are no express warranties. Runco also excludes any obligation on its part for incidental or consequential damages related to the failure of this product to function properly. Some states do not allow limitations on how long an implied warranty lasts, and some states do not allow the exclusion or limitation of incidental or consequential damages. So the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

EFFECTIVE WARRANTY DATE:

This warranty begins on the effective date of delivery to the end user.For your convenience, keep the original bill of sale as evidence of the purchase date.

IMPORTANT: WARRANTY REGISTRATION:

Please fill out and mail your warranty registration card. It is imperative that Runco knows how to reach you promptly if we should discover a safety problem or product update for which you must be notified.

CONTACT A RUNCO AUTHORIZED SERVICE CENTER TO OBTAIN SERVICE:

Repairs made under the terms of this Limited Warranty covering your Runco video product will be performed at the location of the product, during usual working hours, providing location of product is within normal operating distance from a Runco Authorized Service Center. In some instances it may be necessary for the product to be returned to the Runco factory for repairs. If, solely in Runco's judgment, location of product to be repaired is beyond normal operating distance of the closest Runco Authorized Service Center, or the repair requires the unit be returned to the Runco factory, it is the owner's responsibility to arrange for shipment of the product for repair. These arrangements must be made through the selling Runco Dealer. If this is not possible, contact Runco directly for a Return Authorization number and shipping instructions. Runco will return product transportation prepaid in the United States, unless no product defect is discovered. In that instance, shipping costs will be the responsibility of the owner.

PL-43HDX & VIVIX™ PFP™ CONTROLLER OPERATION

General Overview

The PL-43HDX is actually a two-piece system- the Plasma display itself, and the Vivix™ PFP™ Controller. The Vivix PFP Controller is a Digital Scaler that converts NTSC Video, S-Video or Component video to the native resolution of the Plasma display- 1024 x 768. Typically, fixed-pixel devices provide a much more resolved and artifact-free image when they are fed a progressive signal matched to the display's native resolution- exactly what the Vivix PFP Controller does. It also simplifies the operation of the system, as all image adjustments (including aspect ratio control) and video switching are done at the Vivix PFP Controller, not the Plasma itself.

Quick Setup Instructions

1. Install the Plasma display. This could be either table mount, ceiling mount or wall mount configurations.

2. Place the Controller in a rack or another desired location. For best results, It is recommended that the Controller be placed in such an area that less than 75' of RGB cable is needed.

3. Connect the RGB cable between the RGB output of the Controller and INPUT 2 (BNC) of the Plasma display.

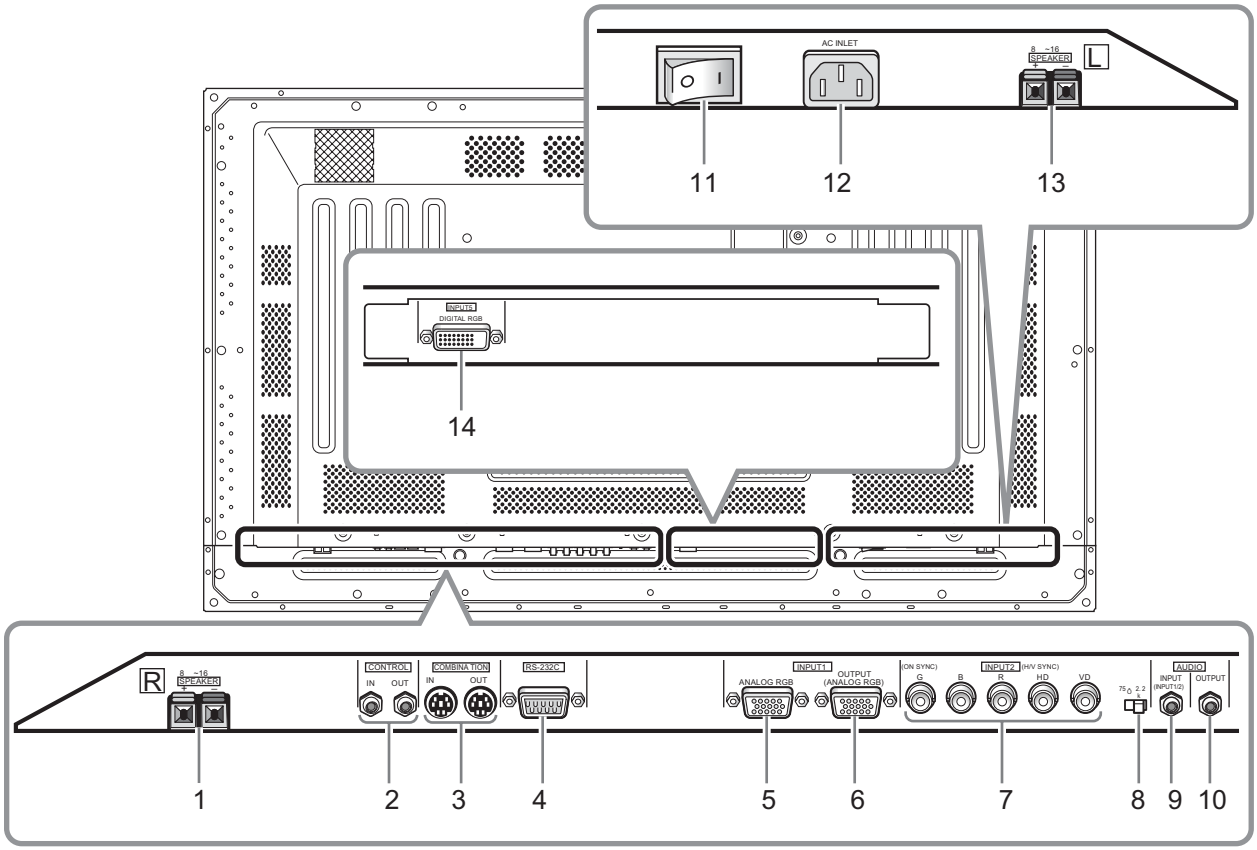
4. Connect all sources to the CONTROLLER (NTSC Component video, S-Video or Composite Video from sources such as DVD players or Satellite receivers, or a DTV or Computer source through the Controller's pass-through).

5. Install the required ComLink to PL-43HDX Panel for auto control from the PL-43HDX Controller.

6. Plug in AC power to both the Controller and the Plasma display, and turn them both on.

7. Select the desired source on the Controller. Ensure that source is now displayed on the Plasma. If it is not, please check the RGB cable wiring, especially H and V Sync.

PL-43HDX INPUTS AND CONTROLS



1 SPEAKER (R) terminal

For connection of an external right speaker. Connect a speaker whose impedance is 8 -16 Ω.

2 CONTROL IN/OUT (monaural mini jacks)

For connection of RUNCO components that bear the SR mark. Making CONTROL connection enables control of the main unit as a component in a system.

NOTE: The main unit cannot be operated by the wired remote control RV-V107.

3 COMBINATION IN/OUT

Used when a number of sets are controlled collectively. Please use a mini DIN 6 pin cable (straight, fully connected) available on the market as the connecting cable.

NOTE: It has no ABL linking function. And it is not compatible with the RM-V4000V or other multi-projection. It is not output when the main power is off.

4 RS-232C

This terminal is used for adjustments by a PC (EIA-232-F standard). Use 9 pin to RJ-11 adapter for phone type cord usage of “auto” control of the PL-43HDX Panel.

5 INPUT1 (mini D-sub 15 pin)

For connection of components that have RGB or component (applies only when equipped with PL-43HDX) output jacks such as a personal computer, DVD player, or external RGB decoder.

6 OUTPUT (INPUT1) (mini D-sub 15 pin)

Use the OUTPUT (INPUT1) connector to output the video signal to an external monitor or other component.

NOTE:

* The video signal will not be output from the OUTPUT (INPUT1) connector when the main power of this display is off or in standby mode.
* When connecting the main units in a series, please set the number that can be connected as a total of 5 including the set that the signal is initially input to. But a condition for performing separate sink or composite sink input and output is that the sink level of the source used is at least TTL level at 2.2k Ω terminal time.

7 INPUT2 (BNC jacks)

For connection of components that have RGB or component (applies only when equipped with PL-43HDX) output jacks such as a personal computer, DVD player, or external RGB decoder.

8 Synchronizing signal impedance selector switch

Depending on the connections made at INPUT2, it may be necessary to set this switch to match the output impedance of the connected component's synchronization signal.

When the output impedance of the component's synchronization signal is below 75 Ω, set this switch to the 75 Ω position.

9 AUDIO INPUT (Stereo mini jack)

Use to obtain sound when INPUT1, INPUT2 or INPUT5 (applies only when equipped with PL-43HDX) is selected. Connect this jack to the audio output connector of the device connected to the plasma display's INPUT1 or INPUT2, or to the audio output connector of the device connected to the video card's INPUT5 (applies only when equipped with PL-43HDX).

10 AUDIO OUTPUT (Stereo mini jack)

Use to output the audio of the selected source component connected to the main unit to an AV amplifier or similar component.

11 MAIN POWER switch

Use to switch the main power or the main unit on and off.

12 AC INLET

A power cable is furnished with the main unit: connect one end of the power cable to this connector and the other end to a standard AC power source.

13 SPEAKER (L) terminal

For connection of an external left speaker. Connect a speaker that has an impedance of 8 -16 Ω.

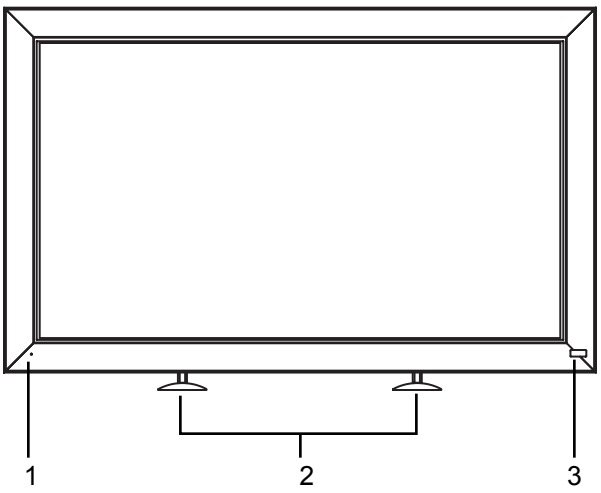
Video Card Section
(applies only when equipped with PL-43HDX)

14 INPUT5 (DVI-D jack)

Use to connect a computer.

NOTE: This unit does not support the display of copyguard-protected video signals.

PL-43HDX Control Panel



Plasma
Front View

1. STANDBY/ON Indicator

This indicator is red during standby mode, and turns green when the unit is in the operation mode. It flashes green when Power-Management function is operating. The flashing pattern is also used to indicate error messages.

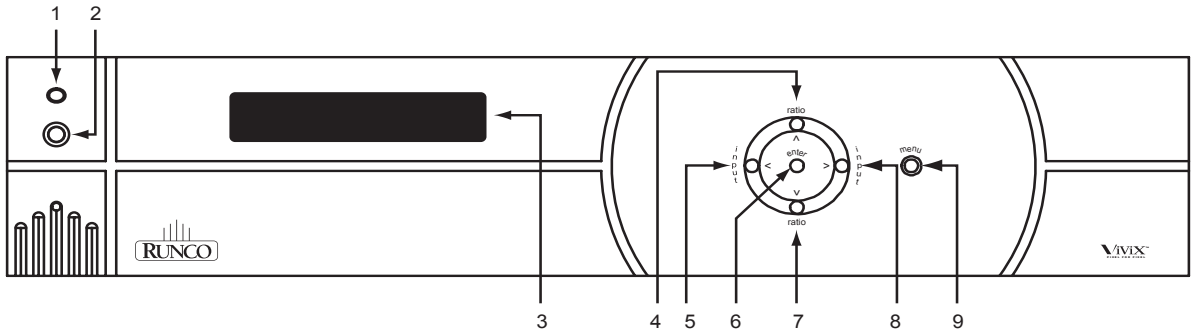
2. Display Stand

3. Remote Control Sensor

Not used.

PFP CONTROLLER DESCRIPTION

Front Panel



1. IR RECEIVER
Receives the IR commands from the remote control.

2. POWER BUTTON
Toggles the power on and off. For a discreet on or off command, you can use the direct access buttons on the remote control. **NOTE:** When the main AC power switch is first turned ON, the processor will go through an initiation cycle for approximately 15 seconds. The processor cannot be turned on or operated until the initialization is complete

3. LED DISPLAY
Indicates the model number, current source, scan rate or resolution and aspect ratio.

4. UP BUTTON
When no menus are present on-screen, the UP button will toggle you through aspect ratios in the following order:

VirtualWide → Standard (4:3) → Letterbox → Anamorphic

When the menu is on-screen, the UP button will move the cursor up within the menu.
When an adjustment item has been selected (i.e. brightness), the UP button will increase the value of that function.

5. LEFT BUTTON
When no menu is present on-screen, the LEFT button will toggle you through the four different sources, in the order of:

DVI → RGBHD → Component HD → Component → S-Video → Composite

6. ENTER BUTTON
When an item is highlighted on the On-Screen Display, the ENTER button will select the item.

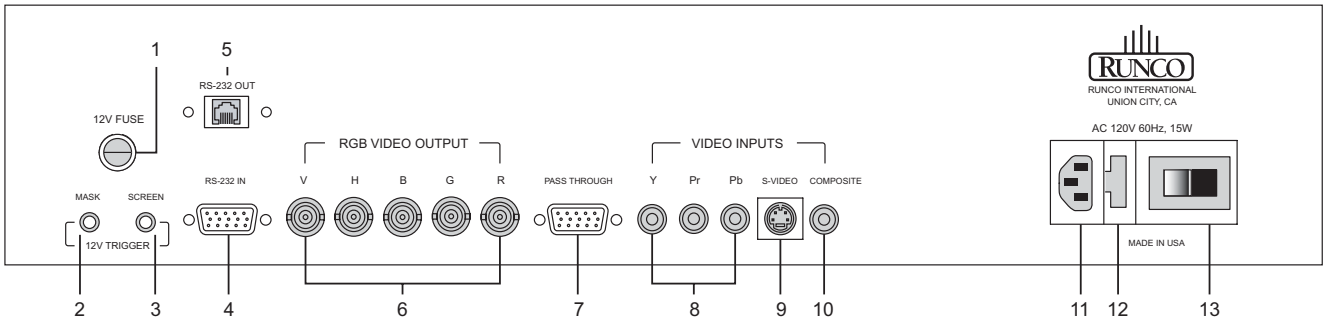
7. DOWN BUTTON
When the menu is on-screen, the down button will move the cursor down within a menu. When an adjustment function has been selected (i.e. brightness), the DOWN button will decrease the value of that function.

8. RIGHT BUTTON
When no menus are present on-screen, the RIGHT button will toggle you through the four different sources, in the order of:

Composite → S-Video → Component → Component HD → RGBHD → DVI

9. MENU BUTTON
Pressing the MENU button will bring up the main menu. If no action is taken within approximately 10 seconds, the menu will time-out (disappear). Also, if you are in an adjustment mode or function, pressing MENU will bring the menu back one level.

Rear Panel



1. **12v Fuse**
   This fuse protects the 12v outputs from the MASK and SCREEN jacks.
   (Screen Fuse: 5mm x 25mm, AGC, 0.5A 250V Fast Acting, 250V, Fast Blow)

2. **Mask**
   This is a 12V output that is used to trigger masking on screens that have that capability.
   (For use on motorized screens only).

3. **Screen**
   This is a 12V output that is used to trigger the screen to drop.
   (For use on motorized screens only).

4. **RS-232 In**
   This is for systems using serial (RS-232) to control the PL-43HDX system.

5. **ComLink to PL-43HDX Panel (Mandatory)**
   Use phone type cord for “auto” control of the PL-43HDX Panel.

6. **RGB OUTPUT**
   This is the main output of the **PFP Controller**. The RGB Signal goes directly to the display; If component is used through the pass-through, then only the R (Pr), G(Y) and B(Pb) jacks will be active. Individually, the jacks are: V=vertical sync, H=horizontal sync, B=Blue, G=Green, R=Red.
   Note: You may input Component HDTV into the 15-pin Pass-thru. Please select Component HD on the menu of the Controller.

7. **Pass-through**
   Anything input to this port will by-pass the processing of the **PFP Controller** and be sent straight to the display. This is useful for computer graphics and HDTV signals which do not require processing.

8. **Component Input**
   This is the input for component video from sources such as DVD players.
   Note: The component output from a DTV decoder or a progressive-scan DVD cannot be used with this port; it must be input to the Pass-through port.

9. **S-Video Input**
   This is the input for S-video from sources such as Satellite receivers, S-VHS VCR’s and DVD players.

10. **Composite Video Input**
    This is the input for Composite video from sources such as Laser disc players, VCRs and other miscellaneous video sources.

11. **Power Input**
    Plug in main power here.

12. **115 VAC Fuse**
    This is the main AC input fuse.(Main Fuse: 5mm x 20 mm, 500mA, 250v, Slow Blow)

13. **Main Power Switch**
    Disconnects or applies main power to the processor.

REMOTE CONTROL DESCRIPTION

A. IR OUTPUT INDICATOR
Illuminates when a button is pressed, indicating that an IR signal is being transmitted.

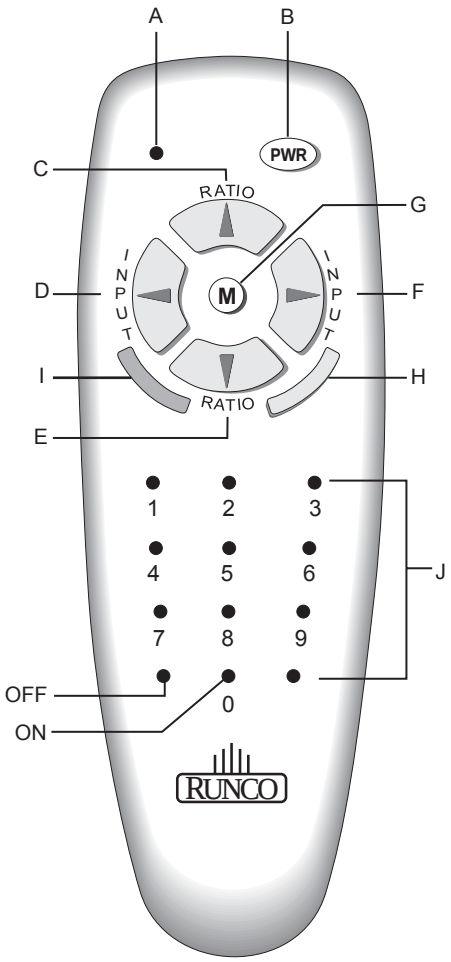
B. POWER BUTTON
Toggles the power on and off. For a discreet on or off command, you can use the direct access buttons (see 'J'). **Note:** When the main AC power switch is first turned ON, the processor will go through an initiation cycle for approximately 10 seconds. The processor cannot be turned on or operated until the initialization is complete.

C. UP BUTTON
When no menus are present on-screen, the UP button will toggle you through aspect ratios in the following order:
VirtualWide → Standard (4:3) → Letterbox → Anamorphic
When the menu is on-screen, the UP button will move the cursor up within the menu. When an adjustment item has been selected (i.e. brightness), the UP button will increase the value of that function.

D. LEFT BUTTON
When no menus are present on-screen, the LEFT button will toggle you through the four different sources in the following order:
DVI → RGBHD → Component HD → Component → S-Video → Composite

E. DOWN BUTTON
When no menus are present on-screen, the DOWN button will toggle you through aspect ratios in the following order:
Anamorphic → Letterbox → Standard (4:3) → VirtualWide
When the menu is on-screen, the DOWN button will move the cursor down within the menu. When an adjustment item has been selected (i.e. brightness), the DOWN button will decrease the value of that function.

F. RIGHT BUTTON
When no menus are present on-screen, the RIGHT button will toggle you through the four different sources in the following order:
Composite → S-Video → Component → Component HD → RGBHD → DVI



G. MENU BUTTON
Pressing the MENU button will bring up the main menu. If no action is taken within approximately 10 seconds, the menu will time-out (disappear). Also, if you are in an adjustment mode or function, pressing MENU will bring the menu back one level.

H. ENTER BUTTON
When an item is highlighted on a menu, pressing ENTER will select that item.

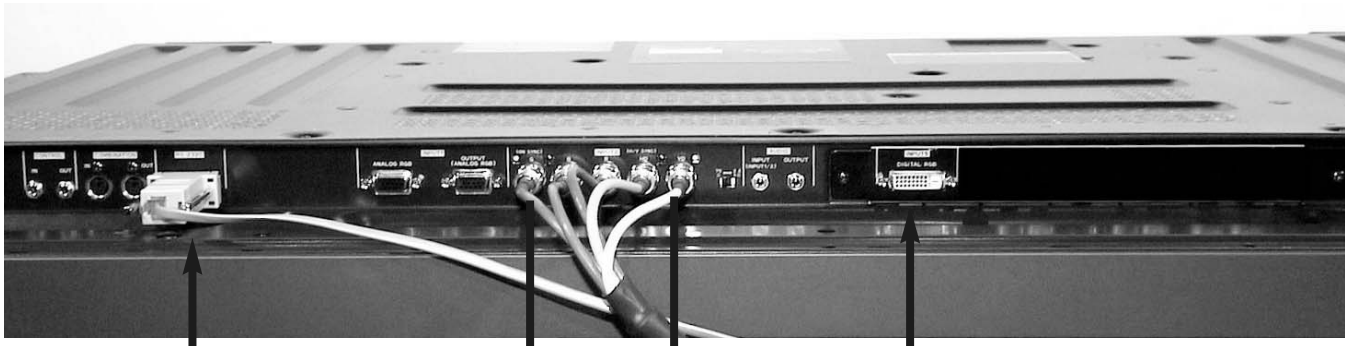
I. PROGRAM BUTTON
Select corresponding code set in the installation menu. To reprogram the remote, press the PROGRAM button followed by 0,1,3.
Note: Pressing Enter after typing in the code is not necessary.

J. DIRECT ACCESS BUTTONS
These buttons will allow you to directly access an aspect ratio, source, or turn the unit on or off without having to go through any menus. These buttons are:

1: Selects COMPOSITE video
2: Selects S-video
3: Selects COMPONENT video
4: Selects COMPONENT HD
5: Selects RGBHD
6: Enables or Disables the Installation Menu (see page 19)
7: Selects the ANAMORPHIC aspect ratio
8: Selects the STANDARD (4:3) aspect ratio
9: Selects the LETTERBOX aspect ratio
0: Turns the processor ON.
OFF: Also known as the button left of '0', this turns the processor OFF.

Connecting the Plasma and PFP Controller

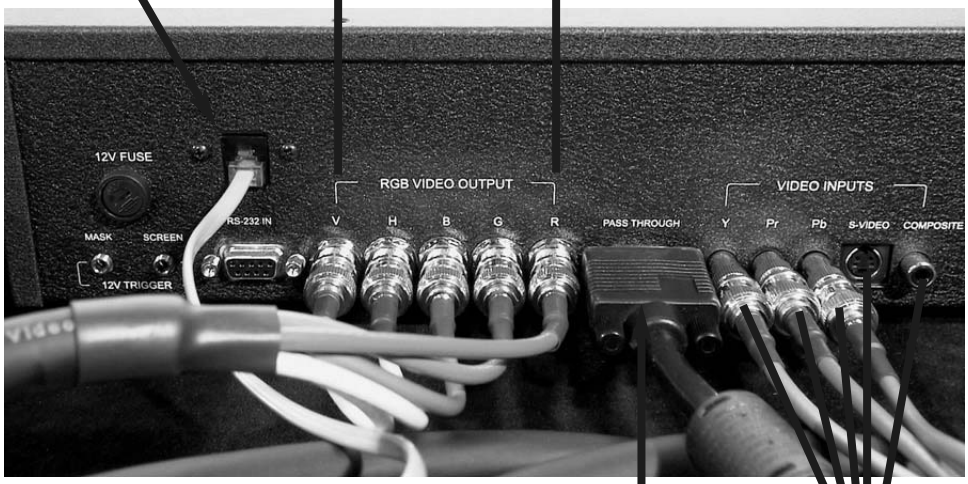
Plasma Bottom View



DVI Source

ComLink Control Cable

RGBHV BNC Terminated Video Cable

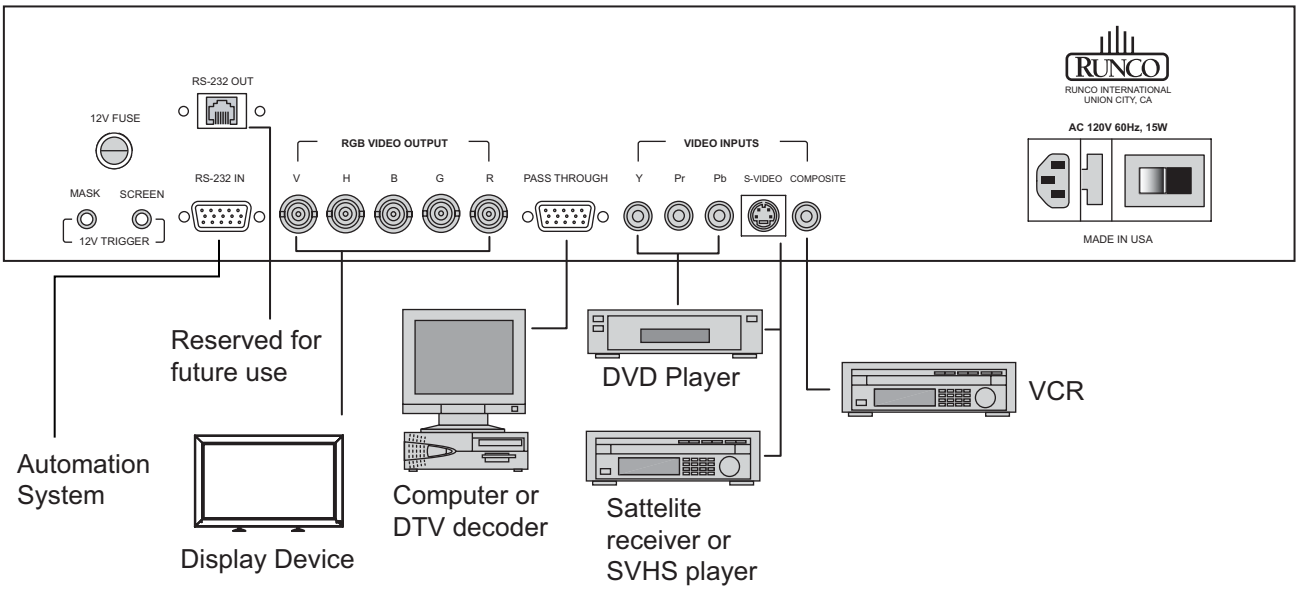


PFP Controller Rear View

HD or Progressive Source

DVD or Interlaced Source

Connection Examples



While there are many different ways to connect your source equipment to your **PFP Controller**, the examples shown above are the most common.

• COMPOSITE VIDEO INPUT:
Composite video is the most common type of signal used, but is also the lowest in picture quality. Many sources have outputs that are limited to composite video, such as some VCR's and camcorders; others such as Laser Disc players actually produce slightly better results when using composite video.

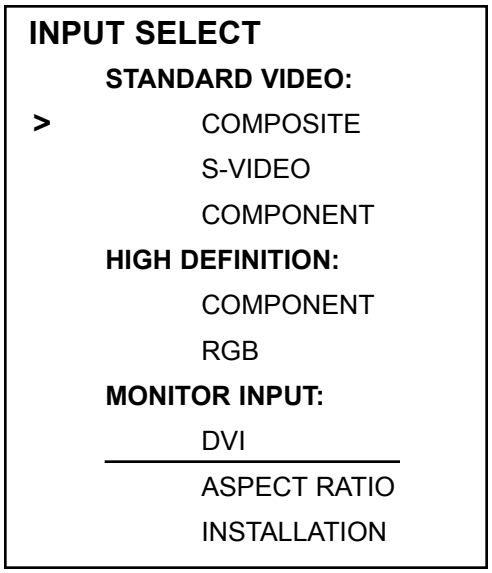
• S-VIDEO INPUT

S-video is the second-best type of signal that can be used, but is MUCH better than composite video. Using such sources as Satellite receivers, high-quality VCRs and DVD players (with no component output) will produce a MUCH cleaner and sharper signal.

• COMPONENT INPUT
Component video is the best type of signal that can be used. The most common sources that use component outputs are DVD players, and it is highly recommended that component be used when possible. Component video goes one step beyond S-video in picture quality; chroma (color) information is more resolved and the overall picture appears more well-defined.

• PASS-THROUGH
This input is used to 'pass-through' any high-definition or computer signals that do not require processing. The signal by-passes the **PFP Controller's** processing and is sent directly to the display. The pass-through may be used for COMPONENT or RGB outputs from a DTV decoder, a progressive-scan DVD player or RGB outputs from a computer or other high-resolution sources.

MENU DESCRIPTION AND NAVIGATION



When the MENU button is pressed on either the remote control or the front panel, the main menu will appear on-screen. An example of the main menu is shown above.

The active source is indicated by an arrow to the left of the source; note that in the example above, Composite is the current source.

To select a source via the main menu, press either the up or down buttons on the remote or front panel and highlight the desired source, and press ENTER. Otherwise, you may select a source by pressing either the left or right arrow buttons (on the remote or front panel) when no menus are on-screen, or by pressing one of the direct access buttons on the remote control (recommended; see page 15).

If HIGH DEFINITION is selected, note that no on-screen menus will be displayed since the signal is simply being 'looped' directly to the output. Pressing MENU will automatically revert to the last selected input. Pressing ENTER allows adjustments via Quick Menu Adjustments from front panel or VirtualWide.

ASPECT RATIO provides selection of one of four aspect ratios: Anamorphic, Letterbox, Standard 4:3 or VirtualWide. To select an aspect ratio via the main menu, press either the up and down buttons on the remote or front panel, highlight ASPECT RATIO and press ENTER. The aspect ratio menu will then appear with the three choices; highlight the desired aspect ratio with the up or down buttons and press ENTER. Otherwise, you may select an aspect ratio by pressing either the up or down arrow buttons (on the remote or front panel) when no menus are on-screen, or by pressing one of the direct access buttons on the remote control.

INSTALLATION is where 'side bar' levels can be adjusted, as well as image shift and blanking controls. A full description of this menu is on page 19.

NOTE: If INSTALLATION does not appear on the main menu, see page 19 for an explanation on how to access the Installation menu.

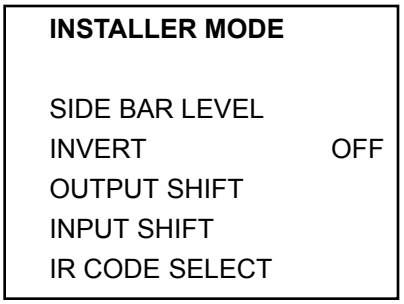
Installation Menu

When the **PFP Controller** is turned on for the first time, the INSTALLATION item will not appear in the main menu. To enable the INSTALLATION menu, there are two options:

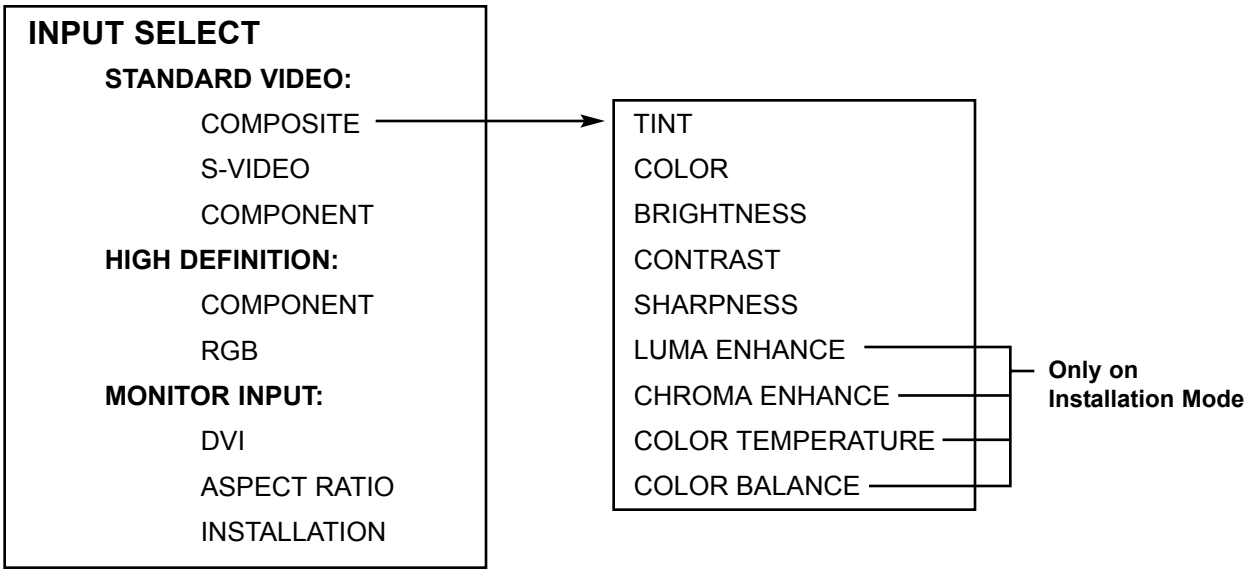
· With the processor *ON* and no menus on-screen, simultaneously press the *ENTER*, *UP* and *LEFT* buttons (you don't need to hold them down). Release the three buttons and press MENU, ensure INSTALLATION is now on the bottom of the main menu.

· With the remote control, press button 6 (with no menus on-screen).
After pressing '6', press *MENU* and ensure INSTALLATION is now on the bottom of the main menu.

After INSTALLATION has been accessed, press *MENU*, highlight INSTALLATION and press *ENTER*. This will bring up the INSTALLATION MENU, shown below:



Picture Quality Adjustments



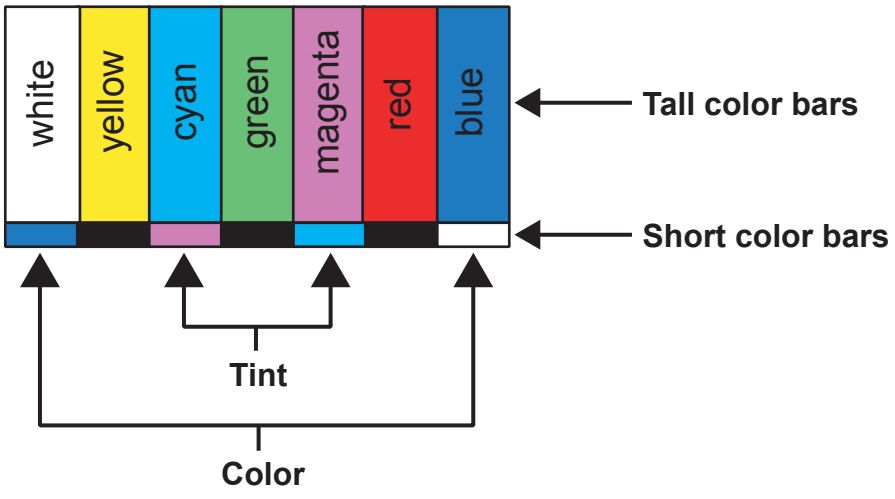
Picture quality adjustments (also known as "Front Panel Controls") are the controls that change different parameters of the image such as the amount of color, black level, etc. While these adjustments can be set to suit the needs of the user, there is a way to set these properly. This section will describe what each function does and how to adjust them properly.

To access the picture quality adjustments, press MENU, highlight the active source (indicated by the arrow) and press ENTER. The picture quality sub-menu will then appear (see above).

To make an adjustment to a particular function, highlight the function with the up or down arrow buttons and press ENTER. Once the function is on-screen (i.e. brightness), pressing the UP arrow button on the remote or front panel will increase the value of that function; pressing the DOWN arrow on the remote or front panel will decrease the value of that function.

While each of the picture quality adjustments can be set to suit the needs of the user, there is a 'proper' way to set the adjustments. For setting TINT and COLOR, please refer to the color bar test pattern below.

NOTE: For many display devices, a BLUE FILTER must be used so only the blue color bars can be seen; if no blue color filter is available, see if the display device has the ability to mute (turn off) the red and green colors via its menu structure (most CRT projectors have this feature). Blue filters are provided with the Video Essentials or AVIA test DVDs, or can be purchased from the Imaging Science Foundation (www.imagingscience.com).



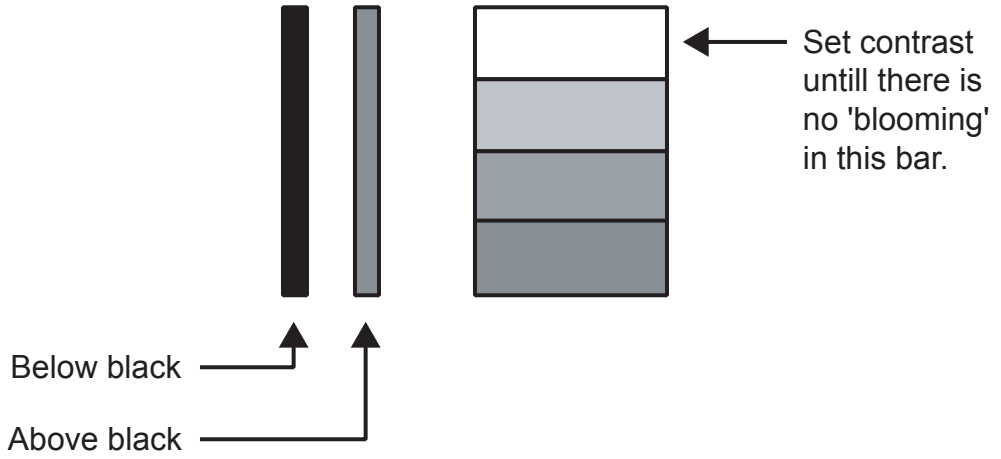
TINT (also known as 'hue') is essentially the ratio of red to green in the color portion of the image. If TINT is decreased, the image will appear redder, and increasing it will cause the image to appear greener. To set TINT properly, look at the color bar pattern through a blue filter (or mute the red and green outputs). Adjust TINT until the middle two tall color bars match the middle short color bars (see color bar drawing).

COLOR (also known as 'saturation') increases or decreases the amount of color in the image. To set COLOR properly, look at the color bar pattern through a blue filter (or mute the red and green outputs). Adjust COLOR until the outer two tall color bars match the outer short color bars (see color bar drawing).

For setting CONTRAST and BRIGHTNESS, please refer to the PLUGE pattern below:

CONTRAST adjusts the white level of the image. For Fixed-pixel displays, adjust contrast until there is a distinct definition between the two brightest bars. **NOTE:** For best results, Runco recommends that CONTRAST be set to '0' or very close to it.

BRIGHTNESS adjusts the black level of the image. To adjust this properly, adjust BRIGHTNESS until the 'below black' bar JUST disappears, but the 'above black' bar is still barely visible. **NOTE:** Some DVD players cannot pass the 'blacker than black' bar (they won't pass PLUGE), and that bar will never be visible. In a case like this, adjust the 'above black' bar until it is slightly brighter than the background that surrounds it.



SHARPNESS adjusts the amount of high-frequency detail in the image. This can be adjusted to the preference of the user. Keep in mind that when SHARPNESS is decreased, fine details in the image will become 'soft'; when it is increased, fine details will become sharper but will also make the picture appear 'noisy' if adjusted too high.

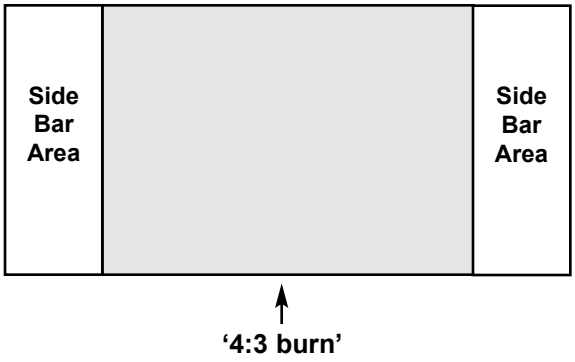
LUMA ENHANCE acts as an edge enhancement, especially around black to white transitions in the image. Essentially, this has the same characteristics as sharpness but affects the edges of objects far more that the rest of the image. FREQUENCIES HIGH/LOW affect the overall range of the LUMA ENHANCE feature. For example, if using a lower-quality video source such as a VCR, the FREQUENCIES should be set to LOW. For a good quality source such as a DVD player, set FREQUENCIES to HIGH. To set FREQUENCIES, press ENTER while LUMA ENHANCE is on-screen.

CHROMA ENHANCE acts as an edge enhancement, especially around color transitions in the image. Essentially, this has the same characteristics as sharpness but affects the edges of objects far more that the rest of the image. FREQUENCIES HIGH/LOW affect the overall range of the CHROMA ENHANCE feature. For example, if using a lower-quality video source such as a VCR, the FREQUENCIES should be set to LOW. For a good quality source such as a DVD player, set FREQUENCIES to HIGH. To set FREQUENCIES, press ENTER while CHROMA ENHANCE is on-screen.

Side Bar Level

Some displays, especially phosphor-based displays such as Plasma (flat panel) displays, can be 'burned' by still-images or otherwise not using the full display or raster.

Besides still images, using a 4:3 image on a widescreen display could cause a '4:3 burn' (see below):



The example to the left shows what would happen on a widescreen display if a small 4:3 image were used more often than widescreen images.

To minimize this problem, the **PL-43HDX** can provide SIDE BARS, which will put grey bars up on either side of a small 4:3 image (see 'side bar area' in the drawing above). This illuminates the otherwise unused portion of the display, minimizing a potential 4:3 burn.

SIDE BAR LEVEL is the amount of illumination in the side bars. The goal is not to make them so bright that they are much brighter than the 4:3 image itself (which could cause a reverse 4:3 burn), but not too dim where they cannot be effective. While there is not a recommended level, Runco recommends keeping the side bar level at a moderate level, approximately the same as the average light used on the 4:3 portion of the image.

IMPORTANT: Runco is not responsible for image burns on any display. Please exercise caution when using a 4:3 image on a 16:9 screen.

Please follow this procedure to set side bar level:

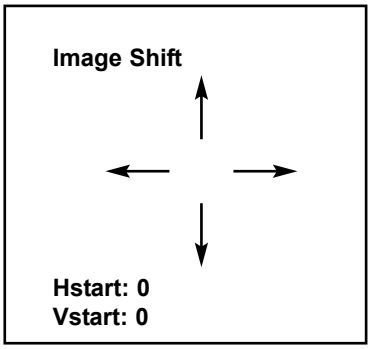
- Ensure an active source is displayed on the screen or display.
- Select the standard (4:3) aspect ratio.
- Highlight SIDE BAR LEVEL on the INSTALLATION menu and press ENTER. Use the up arrow button to increase the illumination of the side bars, or the down arrow to decrease their illumination.
  NOTE: It is recommended that an active image be displayed on-screen, and the level of the sidebars be set to match the average amount of illumination on the 4:3 portion of the image.

Image Shift

IMAGE SHIFT moves the entire image up, down, left or right. If the image is slightly off-center on-screen after installation, using IMAGE SHIFT can center the image on your screen or display.

While using IMAGE SHIFT will not cause any problems with your display, it is possible to use too much image shift, which could cause the image to shake or disappear. Therefore, Runco recommends that image shift be done with the display device itself whenever possible.

Input Image Shift shifts the part of the image that is being “input” to the Controller. Output Image Shift shifts the image being output to the display.



System Reset

In the event that your **PFP Controller** appears to have a software problem, or adjustments have been made so far out of range that the image is no longer on-screen or discernable, you can reset the processor back to factory values. This sets ALL settings back to factory values, so any adjustments made previously will be lost.

To reset your PFP Controller, follow this procedure:

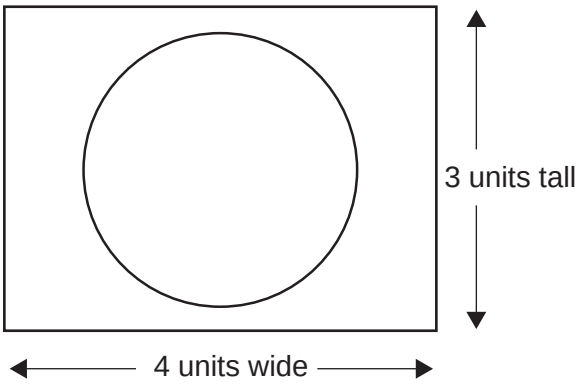
- Turn off the MAIN POWER switch on the back of the processor
- Hold down the DOWN ARROW button, and turn the MAIN POWER SWITCH back on. Continue holding the down arrow button until the LED on the front panel blinks, then release the down arrow button.

Once this is done, your processor has been completely reset to factory values.
After resetting the unit, Composite video will be the active source.

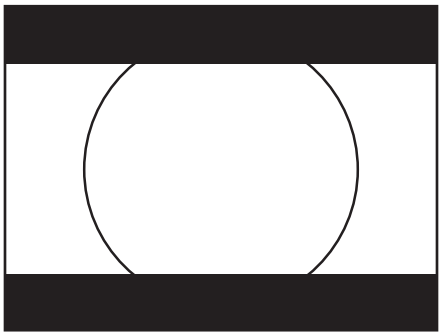
SYSTEM RESET is not on any of the menus; it must be performed using the instructions above.

ASPECT RATIOS

An ‘aspect ratio’ is simply the ratio of the width vs. the height of the screen. For example, the current aspect ratio standard is 4:3 (or 1.33:1), where the image is 4 units wide and 3 units tall.

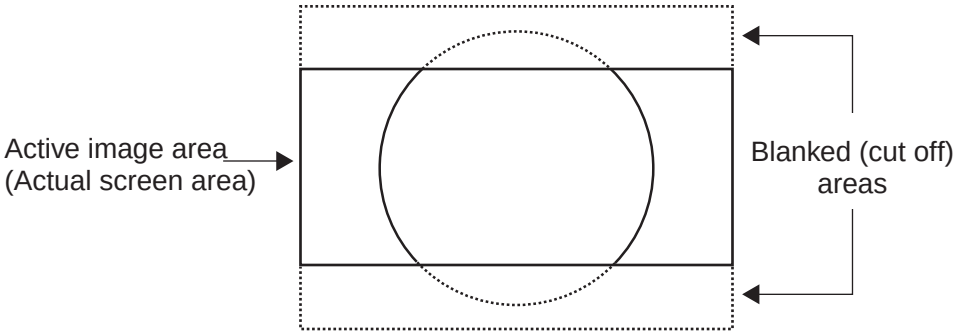


All of our ‘regular’ televisions are this aspect ratio. You have probably noticed that occasionally you’ll watch a movie that does not fill the screen vertically. This is because the movie was filmed in WIDESCREEN (letterbox), and the result is ‘black bars’ above and below the image:



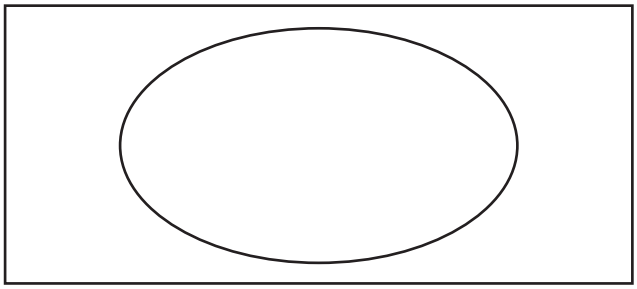
Obviously, watching a movie like this does not lend itself to a truly cinematic experience! This is why Runco invented the first-ever multiple aspect-ratio projection system back in 1991, so true movie-lovers can watch actual widescreen (letterbox) movies on a WIDESCREEN!

A WIDESCREEN can be a number of aspect ratios; many movies are either 1.85:1 or 2.35:1, and HDTV is always 1.78:1 (16:9). The way we create a widescreen (or LETTERBOX) aspect ratio is to take a full 4:3 image, then ‘blank’ (or cut off) the top and bottom so the displayed image is in a widescreen format. For movies recorded in ‘letterbox’, there would be no information above and below the screen anyways, so we’re not losing any of the picture. However, if you were to watch standard television broadcast this way, you would lose some information (see next drawing).

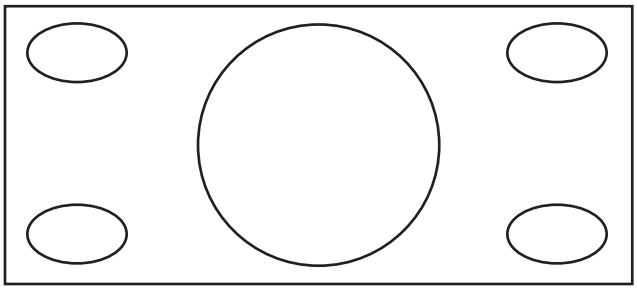


As you can see, our screen in this example is a 1.85:1 ratio. The dashed lines show the area that we 'blanked'. If you recall, watching a letterbox movie on a 4:3 screen gave us black bars; therefore with letterbox movies, we're not losing any information!

The 'other' type of widescreen is called 'ANAMORPHIC'. The image is still a widescreen format, but instead of 'blanking' the top and bottom, we simply reduce the overall height of the image:



As a result, all objects will be 'short and fat' (like the circle above), right? Well, not if you're using software that is anamorphic. Most (but not all) DVD movies have an anamorphic option. Anamorphic material will always produce a better image when using a high quality scaler such as the **PFP Controller.** The reason is that you will actually get more lines of resolution (and ultimately more detail) when using anamorphic titles. Basically, a TV image is made of 480 lines. When using LETTERBOX (the drawing at the top of this page), we're 'throwing away' information by blanking the top and bottom. The end result is that there will only be around 360 lines of information on the screen and 480 with anamorphic.



A 16x9 aspect ratio screen is impressive when viewing movies and HDTV material. Very few sports, news, and television programs have adopted this wide-screen format. Watching this type of material on a 16x9 aspect ratio screen can be confusing or have incorrect geometry - like stretching the image or squashing the image. The Virtual Wide aspect ratio is the perfect solution to this dilemma. By converting a standard TV (4x3 aspect ratio) image to 16x9 with precision scaling, no defects in the geometry are visible to the viewer. The Left and Right edges of the image are gradually, yet progressively scaled to produce a smooth transformation to the 16x9 aspect ratio screen. This makes Virtual Wide a perfect way to fill the 16x9 screen with standard TV aspect ratio material. Sporting events, TV movies, and even the news can be viewed in the 16x9 wide-screen format.

RS-232 COMMUNICATIONS

General Information

Baud rate: 9600 (fixed)
Bits: 8
No Parity

All protocol in ASCII format

RS-232 input connector pin numbers: **TxD= Pin# 2**
RxD= Pin# 3
GnD= Pin# 5

Command format (single command): command value (i.e. brightness 30).
NOTE: A space (not an underscore) or comma may be used between the command and its value.

Command string format: command,command value, command etc.
(i.e. COMPOSITE,BRIGHTNESS 30,ANAMORPHIC)

NOTE: In between commands, comma or space may be used; a space must be used in between a command and its value.

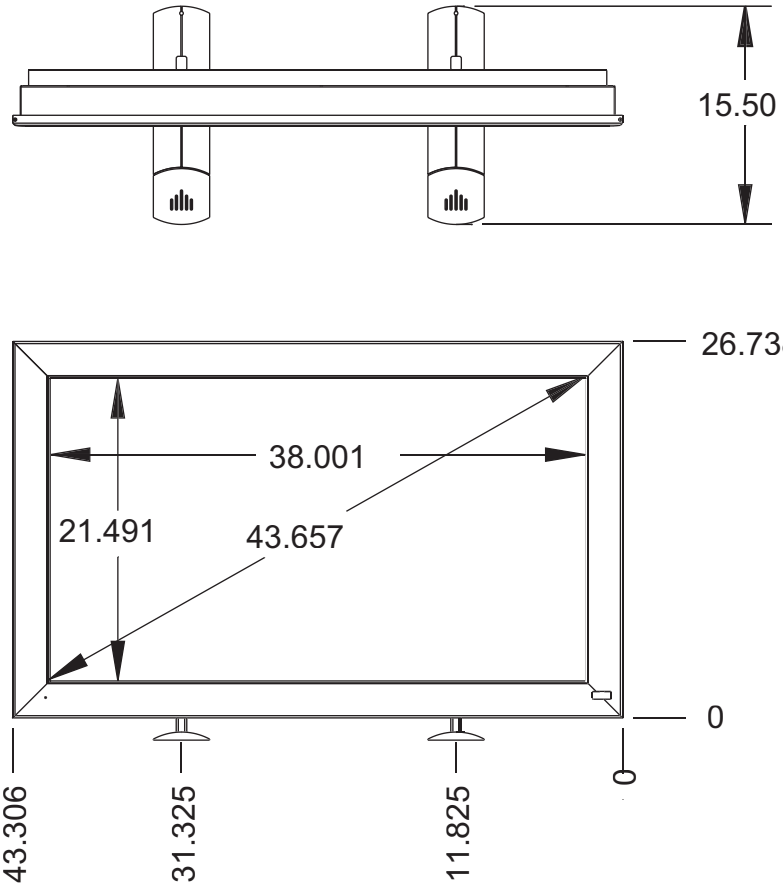
Other notes:

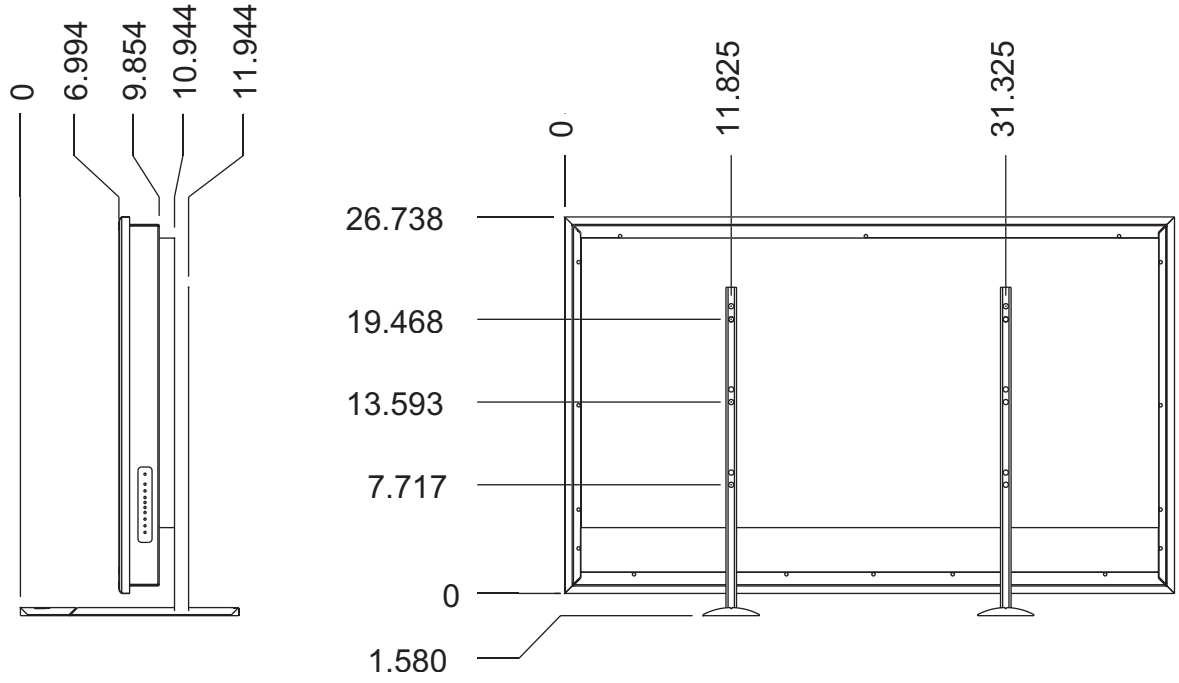
- For command strings, a maximum of 255 characters can be used in a single string.
- If it is necessary to input multiple commands, they should all be together in a single string.
- For values not automatically stored (see next paragraph), the command "!STORE" must be sent in order for the **PFP Controller** to keep the settings. Otherwise, the values will be considered temporary and will revert to their stored settings upon source change or power-up.
- The "Value stored" column refers to a command that is either automatically stored or if it must be manually stored with the "!STORE" command.
- PARAMETER min/max refers to a function's minimum and maximum value range. Inputting values above or below their range may cause unpredictable (but not fatal) results.

RS-232 COMMANDS

COMMAND	PARAMETER (min/max)	Value stored?	DESCRIPTION
ON	NA	NA	Turns Controller on
OFF	NA	NA	Turns Controller off
DISPLAY	0/4	YES	Adjusts the brightness of the front panel display
COMPOSITE	NA	YES	Selects the Composite Video Input
SVIDEO	NA	YES	Selects the S-Video Input
COMPONENT	NA	YES	Selects the Component Video Input
HDCOMPONENT	NA	YES	Selects the Component Input
HDRGB	NA	YES	Selects the RGB input
ANAMORPHIC	NA	YES	Selects the anamorphic aspect ratio
STANDARD	NA	YES	Selects the standard (4:3) aspect ratio
LETTERBOX	NA	YES	Selects the letterbox aspect ratio
VIRTUALWIDE	NA	YES	Selects the virtualwide aspect ratio
TINT	-127/127	NO	Sets a value for tint
COLOR	-127/127	NO	Sets a value for color
AGCCOLOR	0/1	NO	0=Disable Color AGC 1=Enable Color AGC
BRIGHTNESS	-127/127	NO	Sets a value for brightness
CONTRAST	-127/127	NO	Sets a value for contrast
AGCCONTRAST	0/1	NO	0=Disable Contrast AGC 1=Enable Contrast AGC
SHARPNESS	0/255	NO	Sets a value for sharpness
CHROMAHIGH	0/127	NO	Sets a value for high-frequency chroma edge enhancement
CHROMALOW	0/127	NO	Sets a value for low-frequency chroma edge enhancement
LUMAHIGH	0/127	NO	Sets a value for high-frequency luminance edge enhancement
LUMALOW	0/127	NO	Sets a value for low-frequency luminance edge enhancement
!STORE	NA	YES	Stores the current set of values (all values) into non-volatile memory
!RESTORE	NA	YES	Restores the stored values
!FACTORY	NA	YES	Restores all values to factory default levels
!STATUS	NA	NA	Asks the Controller to provide the hardware information, cur rent values and system status to the automation system
!ECHO	NA	NO	Enables the Controller to echo back commands and values to the automation system
!NOECHO	NA	NO	Disables the Controller's character echoing
!INSTALLMODEOFF	NA	NA	Disables the Installation menu (removes it from the main menu)
!INSTALLMODEON	NA	NA	Enables the Installation menu (enables it on the main menu)

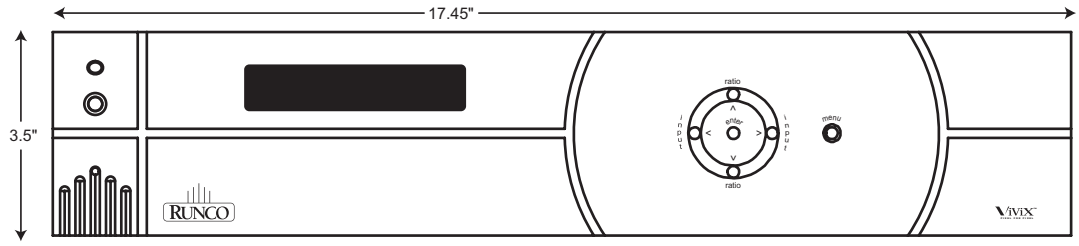
PL-43HDX PLASMA DIMENSIONS



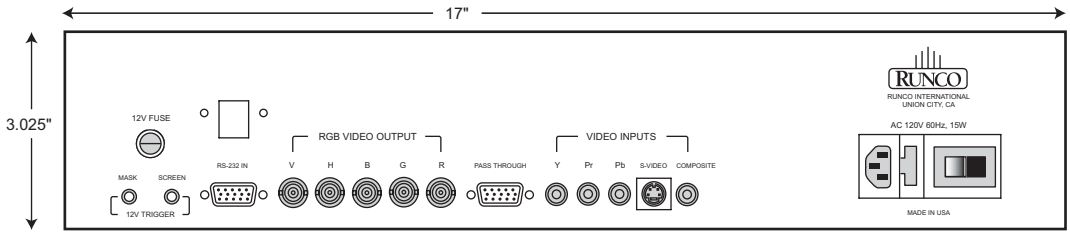


PFP CONTROLLER DIMENSIONS

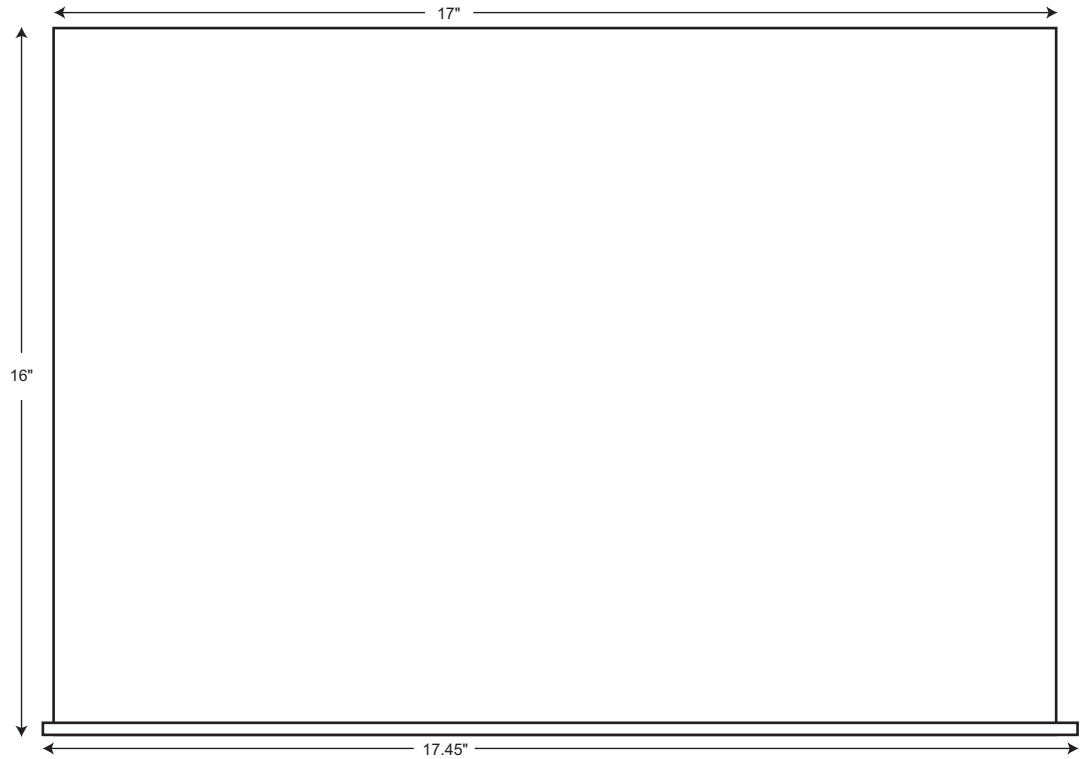
Front Panel



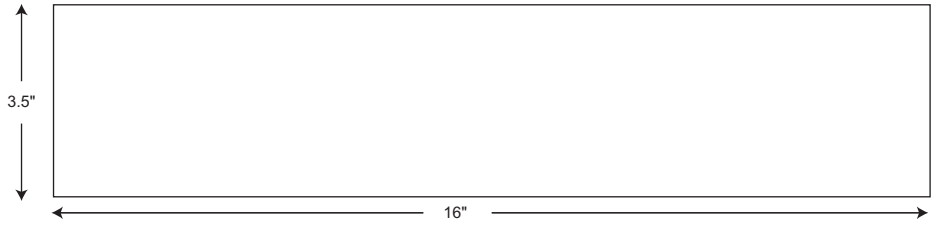
Rear Panel



Top Panel



Side Panel



PL-43HDX PLASMA SPECIFICATIONS

Native Resolution:	1024 x 768
Screen Size:	43 in. (diagonal)
Screen Aspect Ratio:	16:9
Available Aspect Ratios:	4:3, Letterbox, 16:9 Anamorphic, VirtualWide
Image Area (W x H):	37 7/8 in. (949.30 mm) (w) x 21 1/8 in. (536.60 mm) (h)
DTV Compatibility:	480p, 720p, 1080i
Contrast Ratio:	1000:1
Data/Graphics Capability:	640 x 400 to 1600 x 1200
Inputs:	(1) RGB/Component, (1) RGB 15 pin, (1) DVI-Digital
Power Requirements:	100-120 VAC, 50/60Hz
Power Consumption:	380W
Operating Environment:	32º-104ºF (0ºC-40ºC), 20-80% Humidity (non-condensing)
Dimensions	Width: 43 3/8 in. (1102 mm) Depth: 4 3/8 in. (111.13 mm) Height: 26 3/4 in. (679.40 mm) Weight: 80 lbs. (36.3 kg)
Regulatory Approvals:	FCC 15B class B
Limited Warranty:	(3) Three years parts and labor (not including plasma glass panel) from the date of delivery to the end user. (1) One year parts and labor on the plasma glass panel, from the date of delivery to the end user.

PFP CONTROLLER SPECIFICATIONS

Inputs:	(1) Composite, (1) S-video, (1) Component, (1) Pass-through
Input standards:	NTSC (all scan rates), PAL (all scan rates except 480p, 540p and 854 x 480)
Bandwidth:	Composite, S-Video and Component inputs: 5.5 MHz, Pass-through: 100 MHz
Power Requirements:	120-240 VAC, 50/60 Hz (200-240VAC, 50/60 Hz, export version)
Power Consumption:	15W
Control Options:	RS-232, IR, Front Panel
Operating Environment:	41°-95°F (5°-35° C), 0-90% Humidity (non-condensing)
Dimensions:	Width: 17 1/2 in. (443.23 mm) Depth: 16 in. (406.40 mm) Height: 3 1/2 in. (88.90 mm) Weight: 16 lbs. (7.26 kg)
Regulatory Approvals:	Complies with UL, FCC Class 'B', CE, C-tick

Supplied Accessories

- Remote Control w/ 2 AAA Batteries
- Power Cord
- User's Manual

RUMA-009750 rev 10-03

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